BOTANY.—*The wild bean* Phaseolus polystachyus (*L.*) *B.S.P.: Its chromosome number.*[1] H. A. Allard and H. F. Allard, U. S. Department of Agriculture.

Eleven species of beans of the genus *Phaseolus* are known to be more or less generally cultivated in various parts of the world, all of tropical, subtropical, or warm-temperature origin and sensitive to frost. Considerable work has been done by various investigators to determine the chromosome number of the cultivated species, as reported by J. Kawakami in his paper, *Chromosome numbers in Leguminosae* (Bot. Mag. Tokyo **44**: 319–329. 1930). It appears that in all our well-known species of beans of the genus *Phaseolus*, 22 chromosomes is the somatic or *2n* number. Among those reported are the species *P. acutifolius*, *angularis*, *aureus*, *coccineus*, *lunatus*, and *mungo*, as well as varieties of some of these. *Dolichos lablab* also has $22 = (2n)$ chromosomes, as reported by Karpetschenko (1925) and Kachidse (1925).

In the Eastern United States from Connecticut southward to the Gulf, a native wild bean (*Phaseolus polystachyus*) occurs, which is of considerable interest in some of its behaviors. Although stated otherwise in Gray's *Manual of botany* and other botanical works, a characteristic of its germination is the hypogean life of its cotyledons, whereas the cotyledons of most of our beans have an epigean history. The Scarlet Runner bean (*P. multiflorus*), however, is an exception to this, like the wild bean.

The senior writer has found this bean to be an occasional constituent of the flora of the lower mountain areas of Virginia, within the Upper Piedmont physiographic province, and he has studied its ecology and length-of-day behaviors in some detail.

It is eminently unsuited to tropical lengths of day of 12 hours or less and to the winter conditions of daylight in the greenhouses of our northern latitudes. Under such conditions its growth is so slow that it becomes a much dwarfed and practically a dormant plant, devoid of the typical twining habit, and producing few or no flowers.

The rootstock of this bean is perennial, the aerial stems dying down to the ground, where, under favorable conditions of protection, winter buds are formed that originate the new stems of the next summer. The laying down of dormant buds and the gradual dying of the aerial parts at the close of the summer season are nicely adjusted behaviors dependent upon shortening days and lowering mean temperatures.

[1] Received February 1, 1940.